



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Title:** "System and Method for Improving Backup Performance of Media and Dynamic Ready to Transfer Control Mechanism"

**Applicant:** Prasenjit Sarkar

**Attorney Docket No.:** ARC920010097US1

**Serial No.:** 10/035,754

**Examiner:** Alina A. Boutah

**Filing Date:** 12/29/2001

**Art Unit:** 2143

Board of Patent Appeals and Interferences  
Commissioner for Patents  
P.O.Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Dear Sir:

This appeal brief is submitted under 35 U.S.C. § 134. This appeal is further to Appellants' Notice of Appeal that was filed on November 11, 2005.

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**(1) Real Party in Interest**

The real party in interest is International Business Machines Corporation.

**(2) Related Appeals and Interferences**

No other appeals or interferences exist that relate to the present application or appeal.

**(3) Status of Claims**

Claim 28 was objected for depending on cancelled claim 21. The Examiner assumed that this is a typo, and examined claim 28 and its intervening claims as being dependent on claim 27.

Claims 1-19 and 27-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,865,617 to Zeidner et al. (hereinafter referred to as Zeidner) in view of USPAPN 2003/0056000 to Mullendore et al. (hereinafter referred to as Mullendore).

**(4) Status of Amendments**

No amendment is pending.

## **(5) Summary of Claimed Subject Matter**

The present invention relates in general to a system and a related method for improving the performance when backing up media and data over networks using storage and network transport protocols.

### 5.1. Problems addressed by the present invention

Prior to presenting substantive arguments in favor of the allowability of the claims on file, it might be desirable to summarize the present invention in view of the problem it addresses. In general, when a PC communicates with the server, it exchanges messages to ensure the integrity of the communication. It is when several PCs attempt to store data at the server simultaneously, that bottlenecks arise, and the throughput and performance slow down to a halt. A need therefore arises for combining these messages, and for reducing the number of transmission, thereby alleviating some of the network load.

### 5.2. Summary of the subject matter of independent claim 1

Claim 1 describes a method of improving backup performance of block storage over a network with asymmetric traffic (Paragraphs [0001] and [0006]). A client concurrently sends a write command and associated data to a server. (Paragraph [0035]).

The server executing the write command, and delaying transmission of a

SCSI Ready to Transfer (RTT) message, if any is scheduled to be issued by the server, to within a predetermined timeout constraint, in order to reduce the number of RTT messages from the server to the client;

The server receives the write command (block 510, FIG. 5), and then checks its buffer space to ensure that it has enough space to receive the data, in which case it replies with an RTT message to the client. Upon receiving the RTT message, the client starts the transmission of data in the form of a Write Data operation. (Paragraph [0035]).

FIGS. 5 and 6 describe the processing performed at the target and initiator, respectively, in order to combine TCP and SCSI ACKs. TCP ACKs are sent by the target to indicate that the data is successfully received. SCSI ACKs are sent to the client to indicate the completion of the write operation. Thus, TCP ACKs can be delayed at the target and piggybacked along with the SCSI ACKs. (block 530, FIG. 5) Since the TCP/IP ACK is also used for flow control purposes, the SCSI ACK is now also being used for flow control. (Paragraph [0037]).

FIGS. 5 and 6 describe the processing performed at the target and the initiator, respectively, in order to coalesce SCSI ACKs and combine them with TCP ACKs. The SCSI responses can be coalesced at the target to minimize the number of explicit responses that are sent to the initiator. (Paragraph [0045]).

When the SCSI response for a particular write operation is sent to the initiator (blocks 545, 555, FIG. 5), SCSI responses for all of the subsequent

completed writes whose SCSI responses are queued at the target are also sent (piggybacked). The coalescing of SCSI responses helps to reduce the number of explicit TCP messages (carrying SCSI responses) that the target needs to send to the source (block 560, FIG. 5). This reduces the CPU utilization at both the source and the target devices, and this, in turn, improves the overall system throughput. (Paragraph [0048]).

### 5.3. Summary of the subject matter of independent claim 27

While claim 1 exemplifies the present invention in connection with a method for improving backup performance of block storage over a network with asymmetric traffic, claim 27 corresponds to claim 1, and exemplifies the present invention in connection with a computer program product for improving backup performance of block storage over a network with asymmetric traffic.

### **(6) Grounds of Rejection to be Reviewed on Appeal**

Appellants respectfully traverse the following rejection and request that it be reviewed on appeal:

- Claims 1-19 and 27-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Zeidner in view of Mullendore et al.

**(7) Arguments**

**7.A. Argument Responding to the Objection of Claim 28**

Claim 28 was objected for depending on cancelled claim 21 on the ground that this is a typographical error. The Examiner examined claim 28 and its intervening claims as being dependent on claim 27.

Applicants agree with, and thank the Examiner for correcting this clear typographical error and for examining the claims. Applicants will treat the Examiner's position as an Examiner's amendment to amend claim 28. Applicants have amended claim 28 (Appendix A) to redress this typographical error.

**7.B. Argument Responding to the Ground of Rejection**

**7.B.1. The Rejection**

Claims 1-19 and 27-33 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Zeidner in view of Mullendore et al.

Appellants respectfully submit that neither one of the cited references discloses all the elements and limitations of the rejected claims (the invention as a whole). Consequently, the claims presently on file are not obvious in view of the cited references whether considered separately or in combination with each other. In support of this position, Appellant

submits the following arguments:

### **7.B.2. Legal Standard of Obviousness**

The following legal authorities set the general legal standards in support of Appellant's position of non obviousness, with emphasis added for added clarity:

- MPEP 706.02(j), **"To establish a prima facie case of obviousness, three basic criteria must be met.** First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Appellant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) ... The initial burden is on the examiner to provide some **suggestion of the desirability** of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the **references must expressly or impliedly suggest the claimed invention** or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)."
- **In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is** not whether the differences themselves would have been obvious, but **whether the claimed invention as a whole would have been obvious.** The prior art perceived a need for mechanisms to dampen resonance, whereas the inventor eliminated the need for dampening via the one-piece gapless support structure. "Because that insight was contrary to the understandings and expectations of the art, the structure effectuating it would not have

been obvious to those skilled in the art." 713 F.2d at 785, 218 USPQ at 700 (citations omitted).

- MPEP §2143.03, "All Claim Limitations Must Be Taught or Suggested: To establish prima facie obviousness of a claimed invention, **all the claim limitations must be taught or suggested by the prior art**. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "**All words in a claim must be considered** in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)."
- MPEP §2143.01, "The Prior Art Must Suggest The Desirability Of The Claimed Invention: There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (**The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper.**). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).
- "**Obviousness cannot be established** by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion** supporting the combination." In re Fine, 837 F.2d at 1075, 5 USPQ2d at 1598 (citing ACS Hosp. Sys. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). **What a reference teaches** and whether it teaches toward or **away from the claimed invention** are questions of fact. See Raytheon Co. v. Roper Corp., 724 F.2d 951, 960-61, 220 USPQ 592, 599-600 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984). "
- "When a rejection depends on a combination of prior art references, there must be **some teaching, suggestion, or motivation** to combine the references. See In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)." **Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do**



so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See MPEP 2143.01; In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

- "With respect to core factual findings in a determination of patentability, however, the **Board cannot simply reach conclusions based on its own understanding or experience** -- or on its assessment of what would be basic knowledge or common sense. **Rather, the Board must point to some concrete evidence in the record** in support of these findings." See In re Zurko, 258 F.3d 1379 (Fed. Cir. 2001).
- "We have noted that **evidence of a suggestion, teaching, or motivation to combine** may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg. v. SGS Imports Intern., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," Rouffet, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, **the showing must be clear and particular**. See, e.g., C.R. Bard, 157 F.3d at 1352, 48 USPQ2d at 1232. **Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."** E.g., McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact."); In re Sichert, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977)." See In re Dembiczak, 175 F.3d 994 (Fed. Cir. 1999).
- "To prevent the use of hindsight based on the invention to defeat patentability of the invention, **this court requires the examiner to show a motivation to combine the references** that create the case of obviousness. In other words, **the examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references **for combination in the manner claimed**." See In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998).

- The mere fact that references can be combined or modified does not render the resultant combination obvious **unless the prior art also suggests the desirability of the combination**. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, **there must be a suggestion or motivation in the reference** to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).
- If the **proposed modification would render the prior art invention being modified unsatisfactory** for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

### **7. B.3. Application of the Obviousness Standard to the Present Invention**

The Examiner bases the rejection of claim 1, on the following ground:

"Regarding claim 1, Zeidner teaches a method of improving backup performance of block storage over a network with asymmetric traffic, comprising:

a client concurrently sending a write command and associated data to a server (col. 2, lines 16-48; figure 4: 401; col. 8, lines 41-43));

the server executing the write command (col. 9, lines 24-30; col. 10, lines 8-50);

the server combining a protocol acknowledgment message with a SCSI acknowledgment message, into an acknowledgment message, and transmitting the combined acknowledgment message to the client (abstract; col. 1, lines 46-57; col. 3, lines 3-21); and

upon receipt of the combined acknowledgment message, the client recognizing a successful execution of the write command by the server (col. 10, lines 8-50).

However, Zeidner does not explicitly teach the server delaying transmission of a SCSI RTT message to within a predetermined timeout constraint, in order to reduce the number of RTT messages

from the server to the client, and the client de-allocating a buffer that contains the associated data upon receipt of the combined acknowledgement message.

Mullendore teaches delaying a SCSI RTT message within a predetermined timeout constraint [0044-0056; 0058; 0120] and de-allocating a buffer that contains the associated data upon receipt of acknowledgement message [0060].

At the time the invention was made, one of ordinary skill in the art would have been motivated to delay a SCSI RTT message in order to reduce traffic, thus reducing latency, and deallocating a buffer in order to ensure that data is received, thus maximizing the backup performance efficiency."

Zeidner generally describes a mechanism to leverage the TCP/IP multicasting facility to implement backup across multiple targets. In essence, Zeidner addresses a different problem than the present invention, as it focuses on leveraging the IP multi-cast network.

Furthermore, Appellants agree with the Examiner that **Zeidner does not explicitly teach the server delaying transmission of a SCSI RTT message** to within a predetermined timeout constraint. The Examiner resorts to Mullendore as describing the element missing from Zeidner.

It is quite important to note that **the introduction of an intentional delay in the transmission of a SCSI Ready to Transfer (RTT) message, is part of the present invention**, as recited in the claims. As a result, since the main reference, namely Zeidner, does not teach the introduction of the intentional delay, as admitted by the Examiner, Zeidner does not capture the invention as a whole, as required by the legal authorities cited earlier.

In addition, Applicants respectfully submit that Mullendore does not teach the introduction of intentional delay as recited in claim 1. Rather,

Mullendore teaches away from this concept, and teaches expediting the transmission of the frames to reduce the latency. Reference is made to Mullendore, Paragraph [0057], which is reproduced below with emphasis added:

"[0057] The problems set forth above may at least in part be solved by a system and method for reordering received frames **to ensure that transfer ready (XFER RDY) frames among the received frames are handled at higher priority, and thus with lower latency,** than other received frames."

As a result, even if Mullendore were combined with Zeidner, as suggested by the Examiner, such a **hypothetical combination will still teach away from the present invention.**

In addition, neither Zeidner nor Mullendore teaches "the server combining a protocol acknowledgment message with the delayed SCSI RTT message, into an acknowledgment message, and transmitting the combined acknowledgment message to the client".

The Examiner states that in Zeidner: "the server combining a protocol acknowledgment message with a SCSI acknowledgment message, into an acknowledgment message, and transmitting the combined acknowledgment message to the client (abstract; col. 1, lines 46-57; col. 3, lines 3-21)".

However, Applicants respectfully submit that a key feature in the instant claim 1 is to combine the protocol acknowledgment message with the **delayed SCSI RTT message**. Since the Examiner admits the lack of teaching of the introduction of intentional delay, it follows that Zeidner does

combine a "delayed" SCSI RTT message with the protocol acknowledgment message. The Examiner did not acknowledge the presence of this feature in Mullendore. Applicants submit that this feature is not described in Mullendore.

Claim 1 is thus not obvious in view of Zeidner or Mullendore, and the allowance of this claim and the claims dependent thereon is earnestly solicited.

Independent claim 27 is allowable for containing a similar subject matter to that of claim 1. Therefore, claim 27 and the claims dependent thereon are also allowable.

Respectfully submitted,

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**APPENDIX A**  
**CLAIMS ON APPEAL**

1. A method of improving backup performance of block storage over a network with asymmetric traffic, comprising:

a client concurrently sending a write command and associated data to a server;

the server executing the write command, and delaying transmission of a SCSI Ready to Transfer (RTT) message, if any is scheduled to be issued by the server, to within a predetermined timeout constraint, in order to reduce the number of RTT messages from the server to the client;

the server combining a protocol acknowledgment message with the delayed SCSI RTT message, into an acknowledgment message, and transmitting the combined acknowledgment message to the client; and

upon receipt of the combined acknowledgment message, the client recognizing a successful execution of the write command by the server and de-allocating a buffer that contains the associated data.

2. The method of claim 1, wherein the server further selectively delays an issuance of the protocol acknowledgment message from the server to the client.

3. The method of claim 2, wherein the protocol acknowledgment message is a TCP/IP acknowledgment message.

4. The method of claim 3, wherein the combined acknowledgment message is a combined SCSI /TCP/IP acknowledgment message.

5. The method of claim 2, wherein the client sends a sequence of asynchronous write commands to the server.

6. The method of claim 5, wherein the server delays the issuance of a combined SCSI /TCP/IP acknowledgment message for each of the write commands.

7. The method of claim 6, wherein the server further merges combined SCSI /TCP/IP acknowledgment messages for at least some of the write commands into a batch SCSI /TCP/IP acknowledgment message.

8. The method of claim 7, wherein the server sends the batch SCSI /TCP/IP acknowledgment message to the client.

9. The method of claim 8, wherein in response to the batch SCSI /TCP/IP acknowledgment message, the client de-allocates buffers associated with the at least some of the write commands.

10. The method of claim 2, wherein the server transmits the combined acknowledgment message to the client before an expiration of a predefined acknowledgment constraint window.

11. The method of claim 10, wherein the predefined acknowledgment constraint window is approximately 500 msec.

12. The method of claim 2, further including the step of instructing the client to delay resending the write command and associated data to the server.

13. The method of claim 12, wherein the instructing step comprises adding a predetermined delay interval to a round trip time.

14. The method of claim 13, wherein adding the predetermined delay interval comprises adding approximately 500 msec to the round trip time.

15. The method of claim 1, wherein, upon detecting congestion, the server does not delay the issuance of the protocol acknowledgment message to the client.

16. The method of claim 15, wherein the server detects congestion by receiving a notification from the client.

17. The method of claim 16, wherein the notification from the client comprises a message indicating a rate at which client buffers are getting full.

18. The method of claim 1, wherein the network comprises a wide area network.

19. The method of claim 1, wherein the network comprises a local area network.



20 - 26. (Canceled)

27. A computer program product having a plurality of executable instruction codes stored on a computer-readable medium, for improving backup performance of block storage over a network with asymmetric traffic, the computer program product comprising:

- a first set of instruction codes concurrently sending a write command and associated data to a server;

- a second set of instruction codes residing on the server, for executing the write command, and delaying transmission of a SCSI Ready to Transfer (RTT) message, if any is scheduled to be issued by the server, to within a predetermined timeout constraint, in order to reduce the number of RTT messages from the server to the client;

- a third set of instruction codes residing on the server, for combining a protocol acknowledgment message with the delayed SCSI RTT message, into an acknowledgment message, and transmitting the combined acknowledgment message to a client; and

- upon receipt of the combined acknowledgment message, a fourth set of instruction codes residing on the client, for recognizing a successful execution of the write command by the server and de-allocating a buffer that contains the associated data.

28. The computer program product of claim 27, wherein upon recognizing a successful execution of the write command by the server, the client de-allocates a buffer that contains the data.

29. The computer program product of claim 28, wherein the server monitors a buffer consumption; and

if the buffer consumption exceeds a predetermined level, a fifth set of instruction codes residing on the server sending a message to the client, instructing the client to delay sending the data to the server.

30. The computer program product of claim 29, further comprising a sixth set of instruction codes for instructing the client to await a RTT message prior to sending the data to the server.

31. The computer program product of claim 29, wherein the predetermined level is approximately 90% of a total server buffer capacity.

32. The computer program product of claim 30, wherein if the buffer consumption is below the predetermined level, an eighth set of instruction codes residing on the server sending a message to the client, instructing the client to not delay sending the data to the server.

33. The computer program product of claim 28, wherein a ninth set of instruction codes residing on the server selectively delaying an issuance of the protocol acknowledgment message from the server to the client.



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PTO/SB/21 (08-03)

OMB 0651-0031

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# TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/035,754
Filing Date	12/29/2001
First Named Inventor	Prasenjit Sarkar et al.
Art Unit	2143
Examiner Name	Alina A. Boutah
Attorney Docket Number	ARC920010097US1

Total Number of Pages in This Submission

## ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition to Revive	<input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Assignment Recordation documents
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Change of Correspondence Address	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Terminal Disclaimer	1) Certificate of Trasmission by Express Mail
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> Request for Refund	2) Return Postcard
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Response to Missing Parts/Incomplete Application	Remarks _____	
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Samuel A. Kassatly
Signature	
Date	01/11/2006

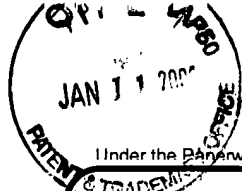
## CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	Samuel A. Kassatly		
Signature		Date	01/11/2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

# FEE TRANSMITTAL

## For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 500

**Complete if Known**

Application Number	10/035,754
Filing Date	12/29/2001
First Named Inventor	Prasenjit Sarkar et al.
Examiner Name	Alina A. Boutah
Art Unit	2143
Attorney Docket No.	ARC920010097US1

**METHOD OF PAYMENT** (check all that apply)☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_☒ Deposit Account Deposit Account Number: No. 09-0441 Deposit Account Name: International Business Machines

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**  
☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	0
Design	200	100	100	50	130	65	0
Plant	200	100	300	150	160	80	0
Reissue	300	150	500	250	600	300	0
Provisional	200	100	0	0	0	0	0

**2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
<b>Total Claims</b>		
- 20 or HP = <u>0</u> x <u>50</u> = <u>0</u>		
HP = highest number of total claims paid for, if greater than 20.		
<b>Indep. Claims</b>		
- 3 or HP = <u>0</u> x <u>200</u> = <u>0</u>		
HP = highest number of independent claims paid for, if greater than 3.		
<b>Multiple Dependent Claims</b>		
<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	
<u>360</u>	<u>0</u>	

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 = _____	/ 50 = _____	(round up to a whole number) x _____		0

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0

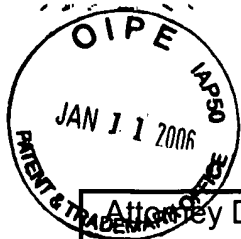
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**SUBMITTED BY**

Signature	Registration No. 32,247 (Attorney/Agent)	Telephone 408-323-5111
Name (Print/Type) Samuel A. Kassatly		Date 01/11/2006

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